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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,896	05/02/2001	Dieter Meissner	KONIG-003	5345

1815 7590 01/15/2003
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203 MAIN STREET
METUCHEN, NJ 08840-2727

EXAMINER

YUAN, DAH WEI D

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 01/15/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/830,896

Applicant(s)

MEISSNER ET AL.

Examiner

Dah-Wei D. Yuan

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,12 and 13 is/are rejected.
- 7) ☒ Claim(s) 2 and 5-11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Application/Control Number: 09/830,896
Art Unit: 1745

**METHOD FOR REGULATING THE FUEL CONCENTRATION IN A FUEL MIXTURE
OF A FUEL CELL WHICH CONTAINS ALCOHOL OR ETHER AS FUEL AND
WATER, AND FUEL CELL SYSTEM**

Examiner: Yuan

S.N. 09/830,896

Art Unit: 1745

January 10, 2003

Information Disclosure Statement

1. The information disclosure statement filed October 1, 2001 fails to comply with 37 CFR 1.98(a)(1), which requires a list of all patents, publications, or other information submitted for consideration by the Office. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Objections

2. Claims 5-11 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 5-11 are not been further treated on the merits.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1,3,4,12,13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kumagai et al. (US 4,810,597).

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Kumagai et al. teach a fuel cell a fuel cell having a fuel electrode, an oxidant electrode, an electrolyte and a methanol concentrating control device. A pipe (9) for feeding fuel to the cell stack (8) is furnished with a methanol concentration control device (10) (measurement chamber). Fuel is stored in a fuel tank (11). A methanol-water mixture is stored in a fuel tank (13) (mixing space) and new methanol is supplied manually through a supply hole (14). The open-circuit voltage of the fuel cell is sensed by a voltmeter (17) via a lead (20). The sensed signal is feedback-controlled by a compensation device (18) on the basis of the relationship between the open-circuit voltage and the methanol concentration. Thus, a methanol-water feed valve is open or close to provide a control of the concentration of the methanol in the pipe (9) by addition of the methanol-water mixture. Figure 10 shows a characteristic methanol concentration verse detected voltage by the methanol concentration control device. The device can measure methanol concentration ranging from 0 to 5 mol/l (which is equivalent to 0 to 20.2% by volume). The method for regulating the fuel concentrating for the fuel cell is also taught. With respect to claim 13, Kumagai et al. disclose the detection device is composed of an oxidant electrode and a counter electrode (a liquid sensor). See Abstract, Column 3, Lines 38-56; Column 4, Lines 1-7; Column 5, Line 56 to Column 6, Line 18; 51-56.

Allowable Subject Matter

5. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 2 would be allowable because one of ordinary skill in the art

would not recognize a method for regulating the fuel concentration of less than 0.1% by volume in a fuel mixture for a fuel cell as stated in the claim.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Okamoto (US 5,723,228) teaches the use of concentration sensors to provide optimum methanol concentration to the direct methanol fuel cell.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (703) 308-0766. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (703) 308-2383. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Dah-Wei D. Yuan
January 13, 2003


Patrick Ryan
Supervisory Patent Examiner
Technology Center 1700